

Archaeological study suggests cultural diversity increases biodiversity of ecosystems

April 9 2024, by Eva Schissler



Credit: Pixabay/CC0 Public Domain

Cultural diversity is likely to have an overall positive effect on the biodiversity of ecosystems. The homogenization of human life forms may therefore be regarded as an important motor of the ongoing major

extinction events in the "Age of Humans" (Anthropocene).

Dr. Shumon T. Hussain from the University of Cologne and Dr. Chris Baumann from the University of Tübingen reached this conclusion in their recent article "The human side of [biodiversity](#): coevolution of the human niche, paleo-synanthropic, and ecosystem complexity in the deep human past," [published](#) in *Philosophical Transactions of the Royal Society B*. The article fits into the current thematic focus, "Multispecies Conviviality," of the University of Cologne's Research Hub MESH (Multidisciplinary Environmental Studies in the Humanities).

In their publication, the scientists examine the role of past humans in the evolution and control of biodiversity on our planet. The archaeologists offer a deep-time perspective grounded in material and ecological data to argue that the idea that humans had lived harmoniously with nature as hunter-gatherers mischaracterizes the fundamental problem of human interaction with [ecosystems](#).

The scientists also criticize that in the recent past, with regard to the aforementioned extinction events, attempts have often been made to highlight the [negative consequences](#) of people actively intervening in their ecosystem more than 10,000 years ago.

The researchers suggest that the relationship between humans and ecosystems has always been much more complicated and complex and that, in addition to negative effects, there are also positive effects on biodiversity that follow certain rules. "Oftentimes, it can even be said that biodiversity loss occurs locally due to human activity, but biodiversity is strongly promoted elsewhere; these dynamics must therefore be placed in a wider context," said Hussain.

The research combines various case studies from the Late Pleistocene (approx. 120,000 to 11,800 years before present) and is also based on a

recent study by the two authors on ravens from the ice age, which shows that these birds benefited from humans as neighbors about 30,000 years ago—especially from food options that [hunter-gatherers](#) in the environment provided for these animals.

The archaeologists based their research on the results of zooarchaeological and stable isotope analyses, which were applied in the case of ravens, and used this and other already published, contextual archaeological information to show that such processes can lead to an increase in biodiversity on a local level. This is because certain animals benefit from human influence and others that are excluded locally by humans, such as larger predators, move to other areas.

Overall, this increases the heterogeneity and complexity of such ecosystems, thereby often resulting in a positive effect on overall biodiversity.

"Ultimately, we try to argue that biodiversity regimes cannot be separated from human influence and that not all of these influences are merely negative," explained Hussain. "It also follows that increased diversity in human life forms probably has an overall positive effect on biodiversity as a whole and that a decisive driver of the biodiversity crisis in the Anthropocene is in part also the homogenization of human life in nature and with it."

More information: Shumon T. Hussain et al, The human side of biodiversity: coevolution of the human niche, palaeo-synanthropy and ecosystem complexity in the deep human past, *Philosophical Transactions of the Royal Society B: Biological Sciences* (2024). [DOI: 10.1098/rstb.2023.0021](https://doi.org/10.1098/rstb.2023.0021)

Provided by University of Cologne

Citation: Archaeological study suggests cultural diversity increases biodiversity of ecosystems (2024, April 9) retrieved 2 May 2024 from <https://phys.org/news/2024-04-archaeological-cultural-diversity-biodiversity-ecosystems.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.